ABSTRACT:

Described is a transmission system for transmitting a multilevel signal (x_k) from a transmitter (10) to a receiver (20). The transmitter (10) comprises a mapper (16) for mapping an input signal (i_k) according to a signal constellation onto the multilevel signal (x_k). The receiver (20) comprises a demapper (22) for demapping the received multilevel signal (y_k) according to the signal constellation. The signal constellation comprises a number of signal points with corresponding labels. The signal constellation is constructed such that $D_a > D_f$, with D_a being the minimum of the Euclidean distances between all pairs of signal points whose corresponding labels differ in a single position, and with D_f being the minimum of the Euclidean distances between all pairs of signal points. By using this signal constellation a significantly lower error rate can be achieved than by using a prior-art signal constellation.

Fig. 4